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Salary schedules for 1962-63 to 1967-68 were obtained from school districts in 11 standard metropolitan statistical areas to test two hypotheses: (1) The amount of postgraduate education of elementary and secondary teachers is directly related to the salary policy of the employing district, and (2) selected personal and professional characteristics of teachers are directly related to the number of graduate credits. After the districts were stratified according to the median salaries offered at the fifth step for the Bachelor's degree and Master's degree, the two highest incentive and the two lowest incentive districts were selected for the study from each SMSA. Hypothesis one was rejected when no significant difference was found in the number of credits attained by individual teachers in high- and low-incentive districts. The characteristics tested for hypothesis two were sex, marital status, number of children, age, teaching level, and years of experience. Only sex was found to be significantly associated with differential attainment of graduate credits, with men earning on the average 20.24 more credits than women. This difference between male and female teachers may be explained by the males' dissatisfaction with teaching and their desire to move into administration, since promotion is based on achievement of graduate credits. (HW)

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PATTERNS OF PROFESSIONAL GROWTH IN HIGH AND LOW INCENTIVE SCHOOL DISTRICTS

by

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Every major school district in the United States offers a salary increase to teachers willing to earn a Master's degree. If one accepts the contention that graduate study serves a valid professional purpose, and therefore should be encouraged, the question arises whether greater motivation to pursue study is achieved under conditions of relatively higher salary incentive. In an earlier study, Benson and Hooker[1] found that school districts would reduce instructional costs very little if all teachers were paid according to the Bachelor's degree lane on the salary schedule. Between 80 and 95 percent of such funds would be needed if the salary schedule were merely collapsed into the Bachelor's degree lane, leaving the number of years of teaching experience as the only variable in the schedule. While Benson and Hooker did not attempt to investigate the relation between incentiveness and patterns of graduate training, their findings suggest a phenomena contrary to conventional wisdom. Offering of a higher salary in one district over another does not seem to result in a substantial difference in the extent to which teachers go on for graduate training.

The findings in the Benson-Hooker study raise alternative hypotheses to explain why some teachers pursue graduate study and others do not.[2] First, there is the suggestion that the amount of post-graduate education of elementary and secondary teachers is directly related to the salary policy of the employing district. That is, individual teachers in "high incentive" districts will have compiled more extensive academic records than teachers in "low incentive" districts. A second hypothesis

assumes that selected personal and professional characteristics of teachers are directly related to the accumulation of graduate credits in either high or low incentive districts. The first may be labeled the "economic man" hypothesis. Thus, a raise in demand through an increase in dollars offered will raise the supply of the desired commodity--teachers with more graduate training. This notion focuses on differences among district salary policies and their effect on teachers to pursue graduate study. The second may be labeled the "role hypothesis." It seeks to explain the pattern of professional growth of teachers in terms of personal differences. It sees teachers as intellects, experts, old, young, male, female, in terms of their individual needs, choices and values. The two hypotheses are not necessarily mutually exclusive. Because earlier research cast doubt on the first, this study tests each on the same population in order to clarify their independent contribution to the explanation of teacher motivation to pursue graduate study.

Incentive

The notion of incentive used here is an economic concept operative over time. In terms of money, the classification of a salary schedule as high or low incentive takes into account three measures. The first consideration is the salary offered to a teacher with a Master's degree and five years of experience. The second consideration is the differential between the Bachelor's and Master's degree lanes at this same point on the schedule. The district offering the highest salary for the Master's degree combined with the largest differential between the lanes is designated high. Applying the logic of the "economic man"

hypothesis, one can speculate that the pull of the high salary combined with the opportunity for a relatively substantial salary increase motivates teachers to accumulate graduate credits. Alternatively, the district offering the lowest Master's degree salary combined with the lowest differential is classified low. Logically, the attraction of a low salary combined with a small reward offered for the completion of the Master's degree will be meager and teachers will be reluctant to pursue graduate study.

The third element in defining incentive is time. The impact of a salary schedule is cumulative over a period of years. Teachers must be exposed to the schedule long enough for it to have some effect. Moreover, since post-graduate study for teachers is generally combined with full-time teaching, the accumulation of credits is a gradual process. For these reasons, the study assumes that teachers currently employed in a school district would need at least five years of "seed time" for the effect of the salary schedule to become measurable.

It should be noted here that the working definition of "incentive" in terms of money and time is a tool for hypothesis testing. It has no inherent validity. Indeed, it is the validity of the term as defined which the research seeks to confirm or reject. Teacher motivation may stem from psychological, social, or physiological sources regardless of, or in combination with, pay scales. This research is designed to define "incentive" more precisely.

Method

The domain for this study included the ten largest suburban school districts in 11 of 17 standard metropolitan statistical areas ranking eleventh to twenty-ninth in size. Salary schedules for the period 1962-63 to 1967-68 were obtained from the districts. The median salary offered at the fifth step for the Bachelor's degree and Master's degree and the median differential between the two were calculated for each district.[3] Using these medians, sets of districts stratified from high to low incentive were thus obtained for each standard metropolitan statistical area. The two highest incentive and the two lowest incentive districts were invited to join the research. The size of the participating districts ranged from 2,688 to 36,718 pupils, with a mean of 10,969.

All teachers in the participating districts composed the population for the study. By selecting at random three elementary schools, one junior high school, and one senior high school in each district a random sample of 6,251 teachers was obtained to represent the population. Questionnaires were distributed to the sample. The method of distributing and collecting the questionnaires was highly successful. A total of 5,067 or 81 percent of the teachers responded. Pursuant to the earlier discussion about the importance of time as an element in measuring the effect of salary incentive, the sample was reduced to include only teachers who had been employed in the same district during the past five years. A total of 2,259 teachers qualified for further consideration in the study.

Further refinement of the sample was necessary. All of the teachers who served during the target period were not suitable subjects

for final analysis. Some of them earned most of their advanced credits prior to the target period. Since the data cannot explain the circumstances under which credits were earned prior to 1962, it was necessary to eliminate all teachers who completed a majority of their graduate credits prior to the target period. Data from the questionnaires of the remaining 959 subjects were coded, punched, and analyzed using a Control Data 6600 computer.

RELATIONSHIP BETWEEN ATTAINMENT OF GRADUATE CREDITS BY TEACHERS AND THE INCENTIVENESS OF THE SALARY SCHEDULE

All usable subjects were included in a mean difference test to determine if the number of graduate credits earned by a teacher can be predicted simply by knowing whether his district of employment is high or low incentive. The findings report in Table I reveal no significant difference in the number of credits attained by individual teachers in high and low incentive districts.

TABLE I

MEAN DIFFERANCE OF GRADUATE CREDITS EARNED BY TEACHERS IN HIGH INCENTIVE AND LOW INCENTIVE DISTRICTS

Classified Districts	Number of Subjects	Mean Number of Credits Earned
High Incentive	537	33.1
Low Incentive	422	34.6
TOTAL	959	Difference Between Means = 1.5
		significant at .54 level (not significant)

In brief, considering only the incentiveness of the salary schedule, one could not predict differences in the attainment of graduate credits by teachers.

To this point, incentiveness of districts has been considered in but two categories--high and low. Table II combines the high incentive districts by metropolitan areas and compares incentiveness with the mean number of graduate credits earned. By conducting a test of rank difference correlation, it is possible to discover the extent of relationship between one degree of incentiveness and the amount of post-graduate training. If incentiveness has a bearing on the tendency for teachers to earn more or less graduate credits, presumably those teachers in the districts with more attractive schedules would earn more credits than teachers in the lower incentive districts.

Findings of the rank difference correlation (r_d) shown in Table II indicate existence of only negligible correlation. The r_d's are so small they reveal virtually no systematic correlation between incentiveness of a district and the pattern of its teachers' post-graduate training. Indeed, the correlation obtained is slightly negative indicating, if anything, a reverse relationship between dollars offered and the tendency of teachers to earn graduate credits. This is true in spite of the fact that some districts pay nearly $2,000 more than others. Also, the differential for the Master's degree ranges from $1,017 in the Minneapolis-St. Paul area to $249 in Dallas-Fort Worth.

TABLE II

RANK ORDER CORRELATION OF INCENTIVENESS AND ATTAINMENT OF GRADUATE CREDITS IN HIGH INCENTIVE DISTRICTS IN THE ELEVEN METROPOLITAN AREAS*

Rank Order by Salary of High Incentive Districts	Metropolitan Area	M.A. Salary (mdn. @ Step 5 1962 to 1967)	Differential	Rank Order of Areas by Credits Earned	
				Men	Women
(Column I)				(Column II)	(Column III)
1	Minneapolis-St. Paul	$7,751	$1,017	7	11
2	Milwaukee	7,489	485	9	10
3	Seattle	7,134	974	1	1
4	Pittsburgh	7,000	570	5	3
5	Cleveland	6,950	500	8	7
6	St. Louis	6,932	612	6	5
7	Indianapolis	6,900	400	4	9
8	Cincinnati	6,825	400	3	2
9	Kansas City	6,709	644	10	8
10	Columbus	6,614	387	2	4
11	Dallas-Fort Worth	5,803	249	11	6

r_d (Column I and II) = -.03

r_d (Column I and III) = -.25

*Explanatory note: To read the table, simply look at Column I, Number 1, Minneapolis-St. Paul, the region with the highest, high incentive district. Moving to Column II, it is seen that Minneapolis-St. Paul is seventh in the mean number of graduate credits earned by men and in Column III, the area is eleventh ranked in mean number of graduate credits earned by women.

Table III is similar to Table II. However, in this instance the rank order correlation of the low incentive districts is examined. Again, there is no strong relationship between the salary schedules and the number of graduate credits earned by teachers.

TABLE III

RANK ORDER CORRELATION OF INCENTIVENESS AND ATTAINMENT OF GRADUATE CREDITS IN LOW INCENTIVE DISTRICTS IN THE ELEVEN METROPOLITAN AREAS

Rank Order by Salary of Low Incentive Districts	Metropolitan Area	M.A. Salary (Mdn. at Step 5 1962 to 1967)	Differential	Rank Order of Areas by Credits Earned	
				Men	Women
(Column I)				(Column II)	(Column III)
1	Minneapolis-St. Paul	$7,422	$789	5	4
2	St. Louis	6,375	410	4	9
3	Milwaukee	6,400	250	10	8
4	Cleveland	6,250	200	11	6
5	Seattle	6,025	250	3	1
6	Indianapolis	6,930	300	7	2
7	Pittsburgh	5,850	300	6	5
8	Columbus	5,718	408	1	"a"*
9	Kansas City	5,551	256	9	7
10	Cincinnati	5,390	200	8	"a"*
11	Dallas-Fort Worth	5,369	264	2	3

r_d (Column I and II) = -.17

r_d (Column III) = -.33

*"a" Columbus and Cincinnati omitted because of low N.

RELATIONSHIP BETWEEN ATTAINMENT OF GRADUATE CREDITS AND SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS OF TEACHERS

Utilizing the technique of regression analysis, the relationship between selected personal and professional characteristics of teachers and the number of graduate credits associated with the characteristic was ascertained. The results are reported in Table IV. These variables were of interest of the investigators and produced clues for further analysis of the data.

TABLE IV

THE NUMBER OF GRADUATE CREDITS ASSOCIATED WITH SELECTED PERSONAL AND PROFESSIONAL CHARACTERISTICS

Characteristic		Graduate Credits Associated With the Characteristic	Significance
Sex	male	20.24*	.05
	female	---	
Marital Status		no meaningful findings	
Number of Children		1.6 per child	.05
Age			not significant
Teaching Level			
	elementary	---	
	secondary	7.70	.05
Years of Teaching Experience			not significant

*The figure 20.24 does not mean that men earned 20.24 credits and women earned none. It means that males earned 20.24 credits more than females. Actual means for credits of men and women are explored in Table V.

The regression analysis reveals that overwhelmingly, sex is the distinguishing characteristic associated with differential attainment of graduate credits. On the average, men earn 20.24 more credits than women. Notably, age of the teacher and years of teaching experience are not factors associated with a particular trend in graduate training; therefore, one can predict that an older teacher in the sample and chosen at random will have a graduate credit record similar to a middle-aged or younger teacher chosen at random. Holding sex and other factors constant, teachers with more children earn some additional credits. Also, secondary teachers earn more credits than their colleagues in the elementary schools.

Quite markedly, sex accounts for about 16 percent of the variance in the number of graduate credits earned, and all of the characteristics combined, including sex, account for only 17 percent of the variance. This indicates that variables unknown account for a substantial segment of the explanation for attainment of graduate credits.

Pursuing the different pattern between the sexes, Table V breaks down mean differences of men and women by district incentiveness. Mean differences between men and women are considerable and significant in both high and low incentive districts. Men in high as well as low districts continue their training to a far greater extent than women.

TABLE V

THE RELATIONSHIP BETWEEN SEX AND THE NUMBER OF GRADUATE CREDITS EARNED

Level of Incentiveness	Sex	Number	Mean	SD	Difference Between Means	Significance
High	Men	189	44.9	30.4	18.3	.05
	Women	348	26.6	26.0		
Low	Men	190	50.8	34.0	29.6	.05
	Women	232	21.2	24.5		

By comparing men and women who do not undertake any graduate training with those who make a choice to go on, Table VI further demonstrates the male inclination to higher training.

TABLE VI

THE PERCENT OF MEN AND WOMEN TEACHERS CHOOSING TO ATTEND GRADUATE SCHOOL

Level of Incentiveness	Sex	Go On for Some Graduate Credits		Do NOT Go On for Graduate Credits		Chi Square Equivalent Equals
		Number	Percent	Number	Percent	
High	Men	172	91%	17	9%	.005
	Women	275	79%	73	21%	
Low	Men	172	91%	18	9%	.005
	Women	161	69%	71	31%	

Only nine percent of the men remain at the B.A. level while 21 percent of the women in high incentive districts and 31 percent of the women in low incentive districts do not go on. This indicates that women are less likely to make the choice to undertake further study. Also, even if a female teacher does continue her education, the amount of such training is less than that of her male counterpart in the classroom as shown in Table VII.

TABLE VII

DIFFERENCES BETWEEN MEAN NUMBER OF CREDITS ATTAINED BY MEN AND WOMEN--CONSIDERING ONLY TEACHERS WHO HAVE MADE A CHOICE TO GO ON FOR SOME GRADUATE WORK

Level of Incentiveness	Sex	Credit Mean	SD	Mean Difference (Credits)	Significance
High	Men	49.3	28.2	15.9	.025
	Women	33.4	24.9		
Low	Men	56.3	31.6	25.89	.025
	Women	30.4	24.1		

It should be noted that the mean differences between men and women cited in Table VII actually represent a substantial trend for women to go on for graduate training to a level less than a Master's degree and for men to earn enough credits to go at least to the M.A. level. This is true for women in secondary teaching as well as in the elementary level. This level difference between the sexes is shown in Table VIII.

TABLE VIII

PERCENT OF MEN AND WOMEN AT THE M.A. LEVEL AND BEYOND

Level of Incentiveness	Sex	Percentages With M.A. Degree or Greater
High	Men	66%
	Women	29%
Low	Men	69%
	Women	16%

Although those women who go on close the gap slightly between the sexes (compare Tables V and VII), the differences still appear to be quite large.

Although incentiveness is not a meaningful predictor of behavior, male teachers, and to a lesser extent female teachers also, admitted that salary per se was an important factor in their decision to enroll in graduate school. Their responses to a question on this subject are reported in Table IX. "No" indicates that the teacher reported that salary was not an important incentive in making the decision to go on; "yes" indicated that salary was an important factor.

TABLE IX

IMPORTANCE OF SALARY INCREASE IN DECISION
TO CONTINUE FORMAL EDUCATION

	MALES				FEMALES			
	20-40 Credits		45+ Credits		20-40 Credits		45+ Credits	
Response	N	Percent	N	Percent	N	Percent	N	Percent
Weak or Absolute "No"	10	17%	68	30%	23	39%	82	54%
Strong "Yes"	49	83%	160	70%	36	61%	70	46%

Finally, 88 percent of the males in the study are married heads of families. Their average age is six years younger than the female teacher and while more than 60 percent of the women are over 36, about 70 percent of the men are under 36. A "typical male," picked at random, is likely to be a relatively young, married secondary teacher with a Master's degree; while a "typical female" is an older, unmarried, primary teacher with some graduate training, but considerably less than a Master's degree.

CONCLUSIONS

Within the limits of this report's sample, larger increments between lanes on the salary schedule do not motivate teachers to pursue graduate training. This conclusion lends a measure of discreditability to a widely held popular conception. The first hypothesis is rejected. In regard to the second hypothesis, the findings show considerable and significant differences between male and female teachers in attainment of credits. The problem now is to explore possible explanations for the sex difference. Men appear to be the"economic men" of the species. They are more likely to enroll in a graduate program and they attain significantly more credits than women who also pursue graduate study. The fact that men go on and that they admit to doing so for pecuniary reasons suggests that they are responsive to their own salary needs. Apparently many men fixed in their labor market seek what extra salary is offered.

There is good reason to believe that young men who have earned a Master's degree and have taught at least five years in one district are committed to careers in education. However, the rather early age of men in this study suggests that males leave the classroom before the age of forty. Indeed, there is very flimsy ground to conclude that the classroom teaching job has been well designed to meet the role needs of most males.

Exploring the social origins of teachers, Charters and others have found that most come from low middle-class family backgrounds seeking the teaching profession as a ladder for social mobility. Expectation for the male role in the American middle class in general, and the lower middle class especially, is geared to self-conscious values of authority and bread-winning. For a male who has exceeded the undergraduate college level, the reality of spending much of one's career at a very modest middle-class salary level, often far below $10,000, in a classroom setting is not vindication for mobility aspirations. In education, then, a conflict exists between the ladder chosen by young men and the actual potential for fulfillment available at its lower rung.

In education, fairly substantial, middle-class salaries and some degree of status are found in the areas of administration. Education is one of the few fields where promotion to supervisory positions is heavily based on the attainment of a certain number of graduate credits. Most states require that prospective administrators earn a certain number and kind of graduate credits. In these states, a person is not even eligible for promotion to high school principal or central office functionary unless an M.A. or higher degree is earned.

With the importance of dollars acknowledged (Table IX) and the presence of a substantial argument for the inadequacy of the teaching role, combined with the clear tendency of men to advance to the M.A. level, one can speculate that many men earn Master's degrees to escape the teacher's pay scale by moving

into administration. For a teacher, the money offered in the single salary schedule and certainly, the status differential between the Bachelor's and Master's degree is frequently and typically quite paltry. The differential becomes substantial, however, if the M.A. is viewed as a union card to some managerial-level position. It is the administrator's salary schedule, not the teacher schedule, which may serve as the basis of incentive for many aggressive male teachers. Twenty to 25 percent of males with 20 or more post-graduate credits indicated that their primary motivation for going on to study was to move into a non-classroom position. The findings of Table IX and, in general, the substantial finding of sex differences suggest a closer connection between salary and administration than was tested here.

Research purporting to tap motivation for individuals to act is, by virtue of the complexity of human behavior, a multiple-facet undertaking. This study has already suggested rejection of the simple causal relation between dollars and attainment of graduate credits. The finding is myth deflating; however it is not very explanatory because it is only one step in the elimination procedure. Further, it was observed that the 16 percent variance accountable on the basis of sex is possibly a clue to a set of variables based on culturally-linked role expectations. Pursuit of the relationship among such factors as social origin of the teacher and his personal role expectations within his own home--his wife's place in the home, his expectations for his children, and his own ego aspirations would increase the accountable variance.

Other factors will no doubt raise the accountable variance. Proximity of accessible graduate training is one variable which should be investigated. How close is a university which readily admits part-time or summer candidates for advanced degrees? Legal constraints on granting of a permanent teaching certificate no doubt affect graduate credit attainment; although this seems nominal in the case of men because the data reveal that mean credits earned by men are at the M.A. level. The general intelligence of the teacher is no doubt an individual factor heavily contributing to his pattern of education. Local custom in hiring or retaining teachers after the probationary period may play heavily on graduate training. Some districts may simply expect a Master's degree regardless of pay scale or, obversely, some may shun it because of the increased cost of maintaining such teachers.

Although this study fails to reveal a simple relationship between the incentiveness of salary and teacher training, it could not test and, therefore, does not disprove one crucial, potential phenomena. In all districts, the overall salary as well as the dollar distance between the B.A. and M.A. lanes was relatively small, even in the high incentive districts. No district in the study offered as much reward for the fifth year of study as was paid for each of the first four years of preparation. Therefore, the study could analyze no data to lend credibility to the notion that substantial differences in salary would go without considerable response by teachers. Perhaps the mean age of male teachers as a percentage of the total classroom teaching force would rise quickly with such salary changes.

FINAL NOTE

One might be struck with the apparent contradiction between post-graduate ambitions of male teachers and the injustice rising from the fact that many seek the training regardless of the salary incentive. Teachers, like workers in general, seem to work more for very little if they have little to start with. Teacher unrest across the nation may be a reflection of this contradiction. The situation is somewhat analagous to the piecework system of early American industry. To earn a small increment, men would work considerably harder, but, when they worked harder, they found that their rewards were really quite incommensurate with their effort. The piecework theory prevailed in industry until the workers recognized their own value and made industrialists either pay or suffer the consequences. Perhaps a large component of motivation in the militant teachers' movement stems from the phenomena that for a few hundred dollars in salary, a teacher will seek a Master's degree which, shortly thereafter, he feels is worth considerably more.

NOTES

1. Charles S. Benson and Clifford P. Hooker, A Study of Salaries for Professional Personnel. (Minneapolis: Minneapolis Public Schools, April, 1967.)
2. See Benson and Hooker, op. cit.
3. The median salary and median differential were judged to be representative of the district's salary policy for the target period.